

Red Oak Fire Rescue Career Development



*Firefighter Transitioning
to Driver/Engineer*

Transitioning to Driver / Engineer

Introduction

Staffing fire department operations in small organizations has and always will be challenging. Daily, we are faced with doing more with less. The intent of this program is to provide training that insures that firefighters with Red Oak Fire Rescue will have the means to develop the skills and knowledge that will create a seamless transition to the driver/engineer position within the organization.

The driver/engineer is responsible for insuring that the apparatus is safe to drive on the streets and highways during emergency responses, as well as non-emergency responses. Ultimately, the safety of fire crews riding on the apparatus and citizens driving on streets and highways are the responsibility of the driver/engineer. As well, the driver/engineer is responsible for efficiently operating the fire pump and other components of an apparatus.

Purpose

It is the intent of this training program to insure that driver/operators for Red Oak Fire Rescue are trained to the highest standard within their occupation. This program will use NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications* and NFPA 1904, *Standard on Aerial Ladder and Elevating Platform Apparatus* as a guide for the training program. Additionally, Red Oak Fire Rescue SOG's and Job Performance Standards will be incorporated in this development program.

Completion of this development program will give driver/operators much insight to safe operation of various types of apparatus in the Red Oak Fire Rescue organization. In addition to this development program, it must be noted that completion of an approved Texas Commission on Fire Protection Driver/Operator-Pumper certification will be required for all personnel that are assigned to a Driver/Operator rank.

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Apparatus Inspection

Daily inspection of fire apparatus is an absolute at Red Oak Fire Rescue. It is imperative that all driver/engineers take ownership of fire apparatus. A systematic inspection of fire apparatus ensures that the apparatus is safe to operate and it will perform to expectations at an emergency incident. Maintenance goes hand-in-hand with daily inspections. An ongoing maintenance program that is instituted by the driver/engineer helps in the prevention of break-downs, reduces the frequency and cost of repairs, and lessens out-of-service time. The purpose of a preventative maintenance program is to attempt to eliminate unexpected and catastrophic failures that could be life and/or property threatening. It is the responsibility of the driver/engineer to be familiar with all working parts of each apparatus.

An integral part of apparatus inspection is apparatus cleanliness. Aside from public perception, cleaning apparatus can reduce maintenance problems. As stated before, driver/engineers must take ownership of apparatus through daily cleaning. All apparatus should be kept clean and free from foreign substances such as dirt, excess grease, and any other unwanted substances. The cleaning maintenance should be distributed to the inside of the cab, the outside of the vehicle (including compartments and equipment stored in the compartments), and the under carriage.

Maintenance issues that are discovered should be immediately documented. In cases of needed maintenance that cannot be performed at the company level, the driver operator shall report the maintenance issue to his/her company officer. As well, the proper documentation shall be forwarded to the apparatus maintenance officer. At any time that the driver/engineer deems that an apparatus is not safe to operate, the driver/engineer shall notify his/her company officer that the apparatus should be taken out-of-service.

Name: _____

Apparatus Inspection

The D/E Candidate shall:

_____ Describe the process of and importance of:

- Daily maintenance
- Weekly maintenance and fluid checks

_____ Locate, identify, and demonstrate operation and maintenance of all equipment carried on each apparatus.

_____ Explain what steps are necessary in reporting any mechanical or maintenance issue discovered on an apparatus.

_____ Using the Inspection Evaluation on the following page, demonstrate the process of properly checking off fire apparatus.

_____ Define the importance of daily truck checks.

_____ Demonstrate the proper method of testing the air brake system.

_____ Demonstrate the ability to install snow chains/cables.

_____ Verbally describe maintenance and precautions when using snow chains/cables.

Company Officer: _____ Date: _____

D/E Candidate: _____ Date: _____

Red Oak Fire Rescue

Apparatus Equipment/Inspection Evaluation

Driver / Vehicle Information

Driver's name:		Date:	
Evaluator's name:			
Vehicle number:			
Start time:		End time:	

S- Satisfactory NI- Needs Improvement U- Unsatisfactory N/A-Not Applicable

	S	N	U	N/
Verbally identifies location of all equipment carried on apparatus				
Correctly identifies/inspects/operates chain saw				
Correctly identifies/inspects/operates gas powered rotary saw				
Correctly identifies/inspects/operates PPV fan				
Correctly identifies/inspects/operates extrication tool hydraulic power plant				
Correctly identifies/inspects/operates cutters/spreaders/ram				
Correctly identifies/inspects/operates thermal imaging camera				
Correctly identifies/inspects/operates multi-gas detector				
Correctly identifies/inspects/operates apparatus generator				
Correctly identifies/inspects/operates apparatus fixed lighting system				
Correctly identifies/inspects/operates portable lighting system				
Correctly identifies/inspects hand tools				
Correctly identifies/inspects apparatus ground ladders				
Correctly identifies/inspects hose loads				
Correctly identifies/inspects hose appliances and adaptors				
Correctly identifies/inspects/operates hand held radios				
Correctly identifies/inspects/operates flashlights				
Correctly identifies/completes apparatus documentation				
Correctly inspects apparatus for damage/cleanliness				
Correctly inspects apparatus tires for wear and pressure				
Correctly identifies/inspects/operates SCBA's carried on apparatus				
Correctly identifies/inspects spare SCBA cylinders for proper pressure and				
Correctly visually inspects apparatus foam tank level				
Correctly identifies/inspects/operates apparatus extinguishers				

Correctly identifies/inspects/operates apparatus EMS equipment				
Correctly identifies/inspects/operates apparatus emergency lighting and				
Correctly identifies/inspects/operates apparatus operating lighting				
Correctly identifies/inspects apparatus fuel level				
Correctly visually inspects apparatus water tank level				
Correctly tests apparatus air brake system				
Correctly identifies/inspects RIT Pack				
Correctly identifies/inspects Pro-Pack				
Correctly identifies/inspects gas can levels and mix percentages				
Correctly identifies/inspects high rise packs				
Correctly identifies/inspects/operates apparatus MDC				
Correctly identifies/inspects apparatus narcotics and documentation				
Correctly identifies/inspects Knox keys				
Correctly identifies/inspects clipboard for necessary departmental forms				
Performs daily pump test				
Performs air brake test				
Performs all operations safely with no violations (Pass/Fail)				

Safety Violations:

- _____ Operates power tools unsafely
- _____ Failure to check braking systems
- _____ Failure to inspect apparatus hose loads
- _____ Failure to insure handheld radio batteries are full
- _____ Failure to inspect apparatus tires for wear and pressure
- _____ Failure to inspect/operate all apparatus SCBA's
- _____ Failure to inspect spare SCBA cylinders for proper pressure
- _____ Failure to inspect apparatus tank water level
- _____ Failure to inspect/operate RIT Pack
- _____ Failure to inspect high rise packs
- _____ Failure to perform daily pump test

Emergency Operations

The ability to safely control and maneuver fire apparatus is one of the most critical aspects of a driver/engineer's obligations. Specifically, it is the driver/engineer's responsibility to get the apparatus and its crew to the scene quickly and safely. However, at no time will a driver/engineer sacrifice safety in exchange for speed.

The yearly statistics released by the United States Fire Administration over the last few years have revealed that accidents involving apparatus are directly related to the second leading cause of line of duty deaths in the Fire Service. Many of these accidents are associated with operator error. At the same time, many of the accidents were related to collisions with vehicles operated with civilians. For this reason, this section will focus on safe vehicle operations and defensive driving techniques. It is important to recognize that this program is not only focused on firefighter safety, but public safety as well.

Name: _____

Emergency Operations

The D/E Candidate shall:

_____ Identify state and local law governing the safe driving and operation of Fire Department vehicles in both emergency and non-emergency response including proper speed.

_____ Explain the concept of “defensive driving”.

_____ Identify approaches to intersections.

_____ Identify “reaction time”.

_____ Explain the maneuver of correcting steering when tires inadvertently leave the pavement.

_____ Identify conditions that would be indicative of reduced speed.

_____ Identify reasons audible warning devices would not be conducive to emergency responses.

_____ Explain the operation and hazards of traffic control devices.

_____ Explain the rule of cushion distance when following other vehicles.

_____ Demonstrate the proper procedure for laying a LDH supply line.

Company Officer: _____ Date: _____

D/E Candidate: _____ Date: _____

Positioning Apparatus

For incident control to be achieved efficiently and safely, apparatus must be positioned so that its use can be maximized. As well, it is highly important that apparatus positioning does not inhibit access or egress of other apparatus or personnel. It is imperative that the driver/engineer properly positions the apparatus before exiting the vehicle. In most cases, once the apparatus is parked and exited, it is not possible to re-position the apparatus. An improperly positioned apparatus can inhibit fire operations, create safety barriers and result in damage to the apparatus.

Often, an apparatus is positioned in a manner that protects personnel as well as citizens during an emergency operation. In these cases, it is essential that the driver/engineer understands the defensive postures that an apparatus can take to help prevent traffic accidents involving responders and civilians on an emergency scene.

Name: _____

Apparatus Positioning

The D/E Candidate shall:

_____ Explain the importance of correct positioning of initial arriving apparatus.

_____ Describe factors that influence apparatus positioning.

_____ Describe positioning practices for an apparatus supporting fire department connections.

_____ Explain the positioning procedures for incidents on streets or highways.

_____ Demonstrate the proper technique for backing a Fire Department apparatus and explain the procedure for backing an apparatus given different circumstances.

Company Officer: _____ Date: _____

D/E Candidate: _____ Date: _____

Pump Operations

Aside from the safety of the crew riding in the apparatus, the most important responsibility of a driver/engineer is delivering the needed flow of water to suppression crews. Although the majority of fires are basically simple in their demand for water, the driver/engineer must be proficient in complex water delivery situations. For this reason, it is of high importance that a competent driver/engineer should spend a great deal of repetitive time training for the complex situations. In other words, the driver/engineer should mentally prepare to be able to pump the highest volume of water that the water system will support. As well, the driver engineer must be prepared to use alternate means to deliver more volume than the water system will support.

Before beginning the process of learning pumping skills, it is important for the driver/engineer to understand the concepts of pump theory. Pump theory introduces the D/E to the mechanical concepts of a pump and the properties of water. It is essential for the D/E to understand how pumps move water and how water moves and reacts through the parts of the pump and the plumbing of the water system.

The driver/engineer will often be required to work in tandem with another driver/engineer. For this reason, it is necessary that the driver engineer is proficient in the skills required to assemble various types of appliances in a wide array of configurations. These skills are acquired and retained through extensive training with complex scenarios. As well, the driver/engineer must be proficient in water supply skills such as tandem pumping, dual pumping, drafting, and water shuttling.

Name: _____

Pump Operations

The D/E candidate shall:

- _____ Explain the use of the vacuum gauge.
- _____ Explain the limitations, based on the vacuum gauge, of the water supply.
- _____ Explain the pressure gauge, its usefulness and its failures.
- _____ Given a scenario, demonstrate proficiency in pumping the maximum pressure and volume that the water supply will deliver.
- _____ Demonstrate the capability of assembling a complex hose deployment using various appliances and hose sizes.
- _____ Verbally describe how to position an apparatus and the limitations involved in relay pumping.
- _____ Demonstrate the proper sequence of connecting LDH to a hydrant.
- _____ Demonstrate the proper method of connecting to a fire protection system FDC, verbalizing the correct PSI.
- _____ Verbally demonstrate the proper sequence of connecting to a fire protection system that has a fire pump.
- _____ Demonstrate the proper method of engaging the primer.
- _____ Explain how the primer works, including the pump theory that supports its mission.
- _____ Explain the pressure relief valve and how it works in the plumbing system.
- _____ Explain the pressure governor, how it works and its purpose.
- _____ Demonstrate the assembly and control of the foam eductor.

Company Officer: _____ Date: _____

D/E Candidate: _____ Date: _____

Aerial Operations

Aerial firefighting apparatus provide fire personnel with an advantage of elevated master streams. Generally, elevated master streams are used only in a defensive mode. Additionally, aerial devices provide a means for personnel to access above ground avenue of ingress, egress and rescue. Aerial apparatus possess their own safety guidelines, separate from firefighting apparatus such as engines and pumpers. For this reason, it is imperative that operators of aerial apparatus receive extensive training of driving and operating the apparatus.

Driving aerial apparatus poses a greater risk because of the distribution of the weight of the aerial and its associated equipment. As well, positioning and deployment of the aerial device present many safety considerations. Failure to follow safety guidelines with aerial devices has a greater incidence of creating a catastrophic event.

Many dangers exist when setting the aerial device. Many environmental factors are reason for concern when setting the aerial device. Among the concerns are overhead obstructions, soft ground, unlevelled surfaces, obstructions adjacent to out-riggers, steep grade, collapse zone, etc. Additionally, the D/E must know the limitations of the aerial device.

The aerial device is operated by a combination of electronic, mechanical and hydraulic integration. Understanding the operation of these features is an essential requirement in the operation of the aerial device. The D/E must comprehend the how the system operates in order to correct failure in one or more of the systems. As well, the D/E must understand the maintenance and inspection of the complete aerial device.

Name: _____

Aerial Operations

The D/E candidate shall:

- _____ Properly position apparatus for a given scenario.
- _____ Properly stabilize apparatus within safety limits.
- _____ Describe safety challenges that could be present when deploying the aerial device.
- _____ Operate aerial device safely, proficiently, with smooth operation of controls.
- _____ Describe the optimal position of the aerial device in relationship to the chassis.
- _____ Demonstrate knowledge and limitations of aerial device load limit.
- _____ Demonstrate ability to operate aerial device utilizing override controls.
- _____ Verbally demonstrate knowledge of the hydraulic power operations.
- _____ Verbally demonstrates knowledge of emergency hydraulic power operations.
- _____ Safely re-bed the aerial device.
- _____ Properly retracts stabilizer and returns apparatus to service.
- _____ Demonstrate the ability to operate and control the nozzle of the aerial device.
- _____ Demonstrate the ability to change nozzle tips.
- _____ Define "owning the address".

Company Officer: _____ Date: _____

D/E Candidate: _____ Date: _____